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Approved: <u>Original Signed by Mark Arenaz</u> Manager, National Spent Nuclear Fuel Program	Date: 12/18/01
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I. PURPOSE AND SCOPE

The National Spent Nuclear Fuel Program (NSNFP) Program Support Organization (PSO) is not the design agency for repository systems, structures, or components nor is it the custodian or shipper of any U.S. Department of Energy (DOE) spent nuclear fuel (SNF). Nonetheless, as a best management practice, the NSNFP adopts Quality Assurance Requirements and Description (QARD) principles for engineering and design-related activities.

This procedure provides instruction for preparation, use, and control of design inputs and outputs. It applies to NSNFP personnel when creating or changing internal design documentation for structures, systems, and components relied on for achieving program objectives or ensuring the safety of personnel or the environment or when reviewing or controlling externally developed design documentation or design services for the same.

II. SUMMARY

The NSNFP PSO performs preliminary and conceptual design activities intended to guide repository design and licensing to accommodate DOE SNF. This procedure directs the preparation of design input and interface documents to specify design objectives and requirements to control these design activities.

III. PROCEDURE

A. Procuring Design Services

NSNFP Technical Staff	1. If design services are obtained outside the NSNFP, procure design services in accordance with PSO 4.02 and GO TO Step III.D.
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B. Preparing or Revising Design Input and Interface Document

NSNFP Technical Staff	1. For new design projects or when revising an existing design input and interface document, prepare an appropriate design input and interface document according to PSO 3.04, Engineering Documentation..
	2. If modifying existing design documentation controlled by the NSNFP, process a change request in accordance with procedures listed in PMP 6.01.

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C. Design

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| NSNFP
Technical Staff | 1. Complete design activities to achieve design objectives according to design input and interface documents and applicable NSNFP procedures. |
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D. Design Verification

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| NSNFP
Technical Staff | 1. Request responsible technical lead to specify if additional design verification is needed. |
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2. If additional verification is necessary, perform the following:

Note: The extent of design verification required is a function of the importance of the design, its complexity, the degree of standardization, state of the art, and similarity with previously proven designs.

- a. Request responsible technical lead to
 - (1) Select and document justification for design verification method selected.
 - (2) Designate qualified personnel to perform design verification.
- b. For design verification using alternate calculations, use PSO 3.03, Engineering Analyses, to review and check the appropriateness of the assumptions, inputs, and calculations by using personnel and analytical techniques different from those employed in the original analysis.
- c. For design verification using qualification testing, perform tests according to PSO 11.01, Testing.

E. Design Outputs

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| NSNFP
Technical Staff | 1. For other than supplier-provided designs, document design outputs, including the results of design verification, in accordance with PSO 3.03, Engineering Analysis, and PSO 3.04, Engineering Documentation. |
| | 2. If customer objectives and requirements are not satisfied, repeat this procedure. |
| | 3. Release design for procurement, fabrication, and other uses as needed. |

IV. REFERENCES

None.

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V. DEFINITIONS

Terms appearing in italics followed by the notation “see glossary” are defined in the NSNFP Documents Manual Introduction and Glossary.

VI. ATTACHMENTS

None.

VII. RECORDS

The following records generated as a result of this procedure require retention in accordance with the identified classification and NSNFP Program Management Procedure 17.01.

Lifetime

None.

Nonpermanent

None.

VIII. PROCEDURE FLOW DIAGRAM

